

## Pollution Prevention Implications of Emissions Trading Programs at Federal Facilities (#223)

Mr. C. Flint Webb, PE      Ms. Lisa A. Trembly, Code ESC426

SAIC M/S R-4-1      Naval Facilities Engineering Service Center

11251 Roger Bacon Dr.      1100 23rd Avenue

Reston, VA 20190      Port Hueneme, CA 93043-4370

Phone: (703) 318-4672      (805) 982-3567

Fax: (703) 736-0826      (805) 982-4832

E-mail: C.Flint.Webb@cpmx.saic.com      ltrembl@nfesc.navy.mil

### ABSTRACT

Increasingly regulators are turning to market based incentive programs to meet environmental goals. For this reason, emissions trading programs are becoming more and more prevalent. Emissions trading programs can provide pollution prevention and air quality engineers with a new economic basis to justify pollution prevention projects.

This paper will outline the various types of emissions trading programs including off-set trading, open market trading and the various allocation trading programs including RECLAIM, and sulfur dioxide trading. We will also show how these programs can be used to justify pollution prevention projects.

Until recently Federal Facilities could not retain the revenues of emission trading programs. However, recent legislation now allows Federal Facilities to retain the revenues for environmental programs and other operating costs. This paper will outline the procedures for trading emissions and retaining the revenues to off-set environmental program costs.

### INTRODUCTION

Emissions trading programs have been promoted as ways to use market mechanisms to achieve compliance. With Congress being increasingly critical of the Environmental Protection Agency's (EPA's) command and control approaches to compliance, market based approaches will continue to play a more important role in new air quality compliance strategies.

Besides playing increasingly greater roles in achieving compliance, these programs could give pollution prevention (P2) planning an added boost by providing additional financial incentives. Recent changes in Federal Law and Department of Defense (DoD) regulations now allow facilities to use the income from emissions trading programs to help pay for the installation environmental compliance costs.

### TYPES OF EMISSIONS TRADING

The Clean Air Act (CAA) specifically mentions emissions trading provisions in Title IV, which governs sulfur dioxide emissions from the combustion of sulfur containing fuels, and in the emission offset provisions of the New Source Review Rules established under Title I. Trading provisions are also included in the implementing regulations for Title VI which governs ozone depleting chemicals. They are also being used frequently as a strategy in local rules and regulations necessary to reach attainment set forth in Title I. All of these trading provisions promote P2 because they create a value for the emissions. However, each of these emissions trading provisions is uniquely executed and also creates disincentives<sup>1</sup>.

#### New Source Trading and Banking

This is the oldest and most established of the emission trading programs. In this program banked emissions can be used to offset emission increases caused by new or modified sources. Banking may take place whenever there is a downturn in production, installation of new pollution control equipment that reduces emissions beyond what is required by existing rules or regulations, or

equipment that reduces emissions beyond what is required by existing rules or regulations, or whenever there is a process change or material substitution that will decrease emissions. Offset trading and banking is particularly important in ozone (smog) non-attainment areas because without these programs businesses in these areas could not increase emissions<sup>2</sup>. As the new ozone standard is implemented this program is likely to have increased application. Typically only trading within a state and usually only within an air basin is allowed, however trades can be made across basin<sup>3</sup> and state lines<sup>4</sup>. Emissions must be<sup>5</sup>:

Surplus, meaning that the reductions are not required by other regulations,

Real, meaning that the reductions have already occurred and that production will not lead to an increase elsewhere in the air basin,

Quantifiable, meaning that the reductions can be measured,

Enforceable, meaning that violations can be enforced by the agencies allowing the trade, and

Permanent, meaning that the reductions will continue in perpetuity.

For P2 projects it may be difficult to prove many of these; for instance a substituted product may have a lower VOC content, but if more of the product is needed there may not be a permanent reduction in emissions. If an installation stops doing a particular operation, but the operation will be transferred to somewhere else in the same air basin, the reductions are not real and are therefore not bankable. An important note to consider is that any grandfathered emission sources (sources that did not have to meet current standards) will have to be brought up to current standards during base closures and realignment. This fact is easily overlooked.

Emissions can be reduced five ways whenever they are banked or traded:

If a new Reasonably Available Control Technology (RACT) standard is planned to go into effect for the equipment being retired or replaced, the actual emissions credit could be decreased by the expected reduction which would be expected from the new technology. This is because the emissions are not considered surplus.

When emissions are being taken out of the "bank" for a new or modified source, they may again be eroded by the expected emissions reductions that could come from RACT requirements on the new equipment. Again the emissions are not considered surplus in this case.

Depending on the attainment status of the local air basin, emissions are further eroded by the offset ratio for the pollutant of concern. This is a requirement of offsetting.

The traded actual emissions must be sufficient to cover the potential emissions of the new or modified source. This is because the emission reductions must be real (only reductions in actual emissions can be considered real), and when they are applied to the new project they must be permanent (meaning there must be permit or physical limitations to ensure the potential emissions will not be greater than what came out of the bank).

Finally, if trading across air basin lines is allowed (which it usually is not), the emissions will be further eroded to account for the impact of the traded source on the air basin of the new source. California is one of the few areas where new source trades are allowed across air basin lines<sup>3</sup> even though ground-level pollution crosses air basin lines elsewhere as well<sup>6</sup>.

Despite these disadvantages, the NSR emissions trading provisions usually allow for inter-pollutant trading, i.e. NO<sub>2</sub> emissions can be used for a new Volatile Organic Compound (VOC) source because both pollutants contribute to ground level ozone.

By creating a value for decreased emissions, these trading provisions give facilities a significant incentive for pursuing P2 projects.

Allocations Trading

There are three basic allocation trading programs currently in place; Sulfur Dioxide (SO<sub>2</sub>) Trading, Ozone Depleting Chemicals (ODC) manufacturing capability trading, and the RECLAIM program in the South Coast Air Quality Air District (SCAQMD). The most active of these programs is the SO<sub>2</sub> trading program. With the exception of the RECLAIM program these programs will have little impact on P2 decision making, and the RECLAIM trading will only affect those facilities in SCAQMD. However since this type of trading is likely to expand into other areas, some discussion of the programs is needed. One attractive feature of these programs as models for new emissions trading provisions is that they tend to have well developed markets with a well established market price.

#### SO<sub>2</sub> Emissions Trading

Under Title IV of the CAA, facilities that have traditionally burned sulfur fuels can trade their allocation to other facilities across state lines<sup>7</sup>. This trading program is an allowance type program whereby named facilities are given an allotment that declines stepwise with time. Initially the allowances were determined based on the BTU rating of the power plants which burn sulfur containing fuel. This program is designed to give facilities time to add controls or modify equipment as the local market dictates. Facilities that lower their emissions early can reap economic benefits by trading their allotments. One unique feature of this trading program is that allocations not used in one year can be rolled over to increase the allowed emissions for the following year. In all other trading programs unused allocations cannot be rolled over. Since acid rain problems cross air basin and state lines it is reasonable and necessary to allow trading across these lines.

#### RECLAIM Emissions Trading

The South Coast Air Quality Management District (SCAQMD) has a different approach to NSR emissions trading called the Regional Clean Air Incentives Market (RECLAIM). RECLAIM establishes initial allocations for some non-attainment pollutants (NO<sub>x</sub> and SO<sub>x</sub>) for each facility in the air basin. These allocations decline with time. If a facility decreases the emissions early, these emissions can be banked for future use or traded to be used by other facilities. This has created a much more robust emissions trading market and encouraged emissions reductions<sup>8</sup>.

#### ODC Production Capability Trading

The regulations governing the phase-out of ODCs include elaborate trading provisions. Not only can one facility trade the production capability to another company, but they can also trade the manufacturing capability of one ODC for the production of another. In the latter case there are adjustments needed to account for differing ozone depleting potentials. In all the trades accomplished thus far there has been a one percent offset to ensure that round-offs do not lead to production being greater than allowed<sup>9</sup>. Since the problem is global, not local in extent there are no geographic adjustments.

#### Open Market Trading

Open market trading is a relatively new concept. It is very similar to offset trading except the emissions are not necessarily for use at new sources but can be used for short term increases in emissions caused by market conditions or for compliance. Each program is different, but generally the same requirements for the emissions to be surplus, real, quantifiable, enforceable and permanent apply. There are no offset requirements, though there usually are transaction penalties on the order of 10% of the emissions. The Office of Air and Radiation of the Federal EPA working in conjunction with the Ozone Transport Assessment Group (OTAG) has proposed requiring 22 states and the District of Columbia to adopt an open market trading rule based on

the model rule proposed in July of 1995<sup>10, 11</sup>. This model rule allows for interstate trading of ozone precursor emissions (principally NO<sub>x</sub>). Many of the states have already initiated rule-making activities and some even have rules in place<sup>12, 13, 14</sup>). This is likely to be an extensive market and one in which Federal Facilities will take part in large measure.

#### ESTIMATING VALUE OF EMISSIONS

The key problem why emission credits have not traditionally been included in P2 decisions is the uncertainties in valuing emissions. The oldest of the emissions trading programs are the new source emissions banking and trading programs. Under these programs facilities have to relinquish a right to emit voluntarily. With all of the uncertainties involved a facility is far better off not banking emissions and instead keeping them in reserve to offset a contemporaneous emissions increase due to expanded operations or increased work load. The proposed Open Market Trading programs may change this situation considerably.

There are essentially three ways to calculate the value of an emissions credit. The first would be mandated costs. These would be costs established in regulation for such trades. The second best way to calculate the value of emissions is by looking at the value of previous trades. For example in a well established market such as the SO<sub>2</sub> emissions market the value of credits is well established<sup>15</sup>. The third would be to use the costs for controls.

Most emissions trading markets are not well established and there is no established market price. In these instances it is useful to evaluate local market prices and possible trends, but you may also want to estimate the value based on the costs to comply with regulations. Most agencies evaluate regulatory options based on the costs for implementing the regulation. The value of a given pollutant can be estimated based on what is considered a reasonable cost of control under the Best Available Control Technology (BACT) program. The local air district should be able to provide this value. The value will vary greatly from air basin to air basin because it will be driven largely by what will be required in that local air basin to reach attainment of the NAAQS. However, it is important to note that the value of an emissions credit also should take into consideration the time-value of money. Emissions from sources that will soon come under a RACT standard need to be discounted. However, permanent reductions should be valued more, because the credits will be good year after year.

#### FEDERAL FACILITIES IMPLICATIONS

Until recently, federal facilities have not been able to retain the economic proceeds gained as a result of emissions trading programs. Facilities have only been able to benefit from trading transactions for purposes of industrial growth, that is, when old equipment is retired to allow for the installation of new equipment. Also, facilities in certain air basins that wished to increase operations were able to capitalize on emissions banked from closures of facilities within that same air basin. Now federal facilities have a new incentive to incorporate P2 measures at their facility.

On November 18, 1997 a law was passed under §351 of the FY98 DoD Authorization Act, which allows for a "pilot program to assess the feasibility and advisability of the sale of economic incentives of the reduction of emission of air pollutants attributable to a facility of military department."<sup>15</sup> This means that federal facilities now have the opportunity to use the proceeds from sales at their installation instead of depositing proceeds to the US Treasury. The pilot program is only in effect for 2 years. As of the writing of this paper, procedures for implementation of the pilot program have been approved by the Deputy Assistant Secretaries of the Navy, Army, Air Force and the Staff Director of Environmental Safety and Policy of the

Defense Logistics Agency. Final authorization from Deputy Under Secretary of Defense, Sherri W. Goodman, is still pending. Ms. Goodman has stated that she feels it essential that the Services become astute in trading programs in light of expected changes resulting from the Kyoto Protocol (global warming). The request by the SSC for the pilot program was patterned after the changes made to the "Military Construction Codification Act<sup>17</sup>, which provides for the proceeds from the sale of recyclable materials to be retained by that facility which sells them via a "Qualified Recycling Program". Previous to this enactment, facilities were required to deposit the proceeds obtained from the sale of recyclable materials to the U.S. Treasury. This provided little incentive for facilities to recycle. Now that facilities can retain proceeds, recycling rates have continued to increase. In calendar year 1997 the recycling rate of 37% has been the highest ever in the Navy<sup>18</sup>. This success is attributed directly to incentives by installations to retain their proceeds along with other regulatory requirements. If the balance available to an individual facility is in excess of \$2,000,000.00 the amount of that excess shall then be deposited to the U.S. Treasury.

Unfortunately, the cap Congress allowed for the air emissions trading program is only \$500,000.00 for the entire DoD. Other requirements under the pilot program are: economic incentives can't be sold if needed for operational use or if they are attributable under closure or realignment of a military installation. Sales may be transacted similar to the way they are within industry such as through an air broker, listing in environmental trade letters, through the local air pollution control district and listing in local newspapers.

Similar to the requirements found in the Qualified Recycling Program, facilities must first use the proceeds from the sales of emissions on transactional costs, such as the costs a facility uses to identify, quantify, value or establish the air pollution emission reductions in order to create a marketable incentive. Transactional costs do not include the costs of new capital equipment or modifications or existing equipment which aid in the reduction of air pollution emissions or internal labor costs.

Reports will need to be made to the DoD Comptroller as to the air quality district where the incentives were sold; the pollutant amount, type and applicable year; the applicable time period and the type of economic incentive; the amount of sale proceeds; transactional costs and the balance remaining.

Once this is done, the proceeds are available for all programs, projects, and activities necessary for compliance with Federal environmental laws.

## CONCLUSIONS

This paper has provided a brief overview of air emissions banking programs, some of the problems with these programs and how to value emissions. It is possible that emissions trading can be a powerful incentive for P2 as evidenced in Sulfur Dioxide Trading, New Source Trading and Banking and the RECLAIM programs. However, the strength of the market dictates how successful trading programs can be and certainly trading can be a difficult navigation through requirements. The DoD program is fairly straightforward, however facilities will need to become more aware of the trading principles outlined in this paper if they are to be successful. The fact that the entire DoD cannot retain proceeds above \$500,000 is too restrictive. The reason Congress has been so limiting is because funds have been specifically appropriated to facilities, and facilities should not have "increased" funds above what they are specifically appropriated. This is not realistic, however, because facilities often find funding for environmental compliance difficult to obtain. Coordination between installations will be difficult and the cap could easily

be met without realizing it. It's important the SSC continue to lobby for the cap to be increased and be unique to a particular service, for example, at least \$1,000,000 per service. The SSC will also need to lobby to have the pilot program extended beyond the current deadline in order for the Services to finally experience the intent of the program: "to further reduce air pollution through creation of economic incentive strategies." Facilities need to trade effectively to prove the worth of the program and as October 1, 1999 looms closer it's imperative that facilities be fully prepared to take advantage of the program once signed by Ms. Goodman.

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